# AGRICULTURAL DEPARTMENT.

J. P. STELLE, EDITOR.

PUBLISHER'S NOTICE—All communications intended for this department should be addressed to PROF. J. P. STELLE, Fort Worth, Tex.

### THE NAVY BEAN QUESTION.

Some months ago we published in these columns an article attempting to give good reasons for why the navy bean, sometimes called the "Yankee soup bean," might be made a successful and profitable crop for Texas. The article attracted a good deal of attention, and brought to us numerous letters (some of which we published) indorsing our views and showing that the bean was already raised in Texas to a considerable extent, for home use, and that it was invariably a success. The interest worked up by us spread beyond the borders of our own state, and now comes the Kentucky Farmers' Home Journal saying, in substance, that the United States imported last year about $1,000,000 worth of white navy beans, which might as well have been produced in this country. Of course one feels almost ashamed to mention, in Texas, any supposed-to-be great thing involving so small a matter as only $1,000,000. Texas don't build much on a single million. You who read this page of THE GAZETTE well know that last week we showed you by an argument irrefutable that Fort Worth alone was losing at least $1,000,000 a year by not having her surroundings settled up and properly worked. But outside of Texas $1,000,000 is a big thing, so we may talk on about the navy bean, after our contemporary, suggesting, however, that should Texas once become fairly concerned in navy bean culture, she'd talk millions in dollars and cents instead of $1,000,000.

The crop, says the Home Journal, is easy of growth, and far more profitable than either corn, wheat or cotton. One would think that this boasted country of ours, with its vast territory and varied climate, might produce beans enough for home consumption, and even grow a few to spare. An increased attention to this subject is all that is necessary to effect the desired increase in the home growth. Like all other branches of agriculture, to be made profitable it must be learned and properly managed.

In the selection of land for the white navy bean, continues the Home Journal, you should look out for thorough drainage. The land need not be extremely rich—medium fertility will answer every purpose. If not up to medium fertility it should be so brought up by the application of manures. Wood ashes usually give good results, especially if supplemented with a little bone meal or super-phosphate. A good potato or vegetable manure can always be depended upon as a fertilizer for navy beans. Prepare the ground by plowing and thorough harrowing and rolling. Plant seed with a drill, or by hand. In the latter case furrows must be marked out, say three feet apart and an inch or two deep. After planting, seeding may be covered, and the soil firmed by means of the feet. Leave plants six to eight inches apart, and cultivate freely. Do not hill. Small beans will require about half a bushel of seed to the acre; medium three pecks, and the large sorts one bushel. The time of planting varies according to the variety to be planted. The early varieties may be planted as late as July, while the later ones should be planted as early as June. Of course this is presuming that the region is one of a fair amount of rainfall throughout the season. In a region where the the rainfall is good early in the season, but is liable to be followed by severe summer drouth, it would be best to get the crop in as early as possible to give it the benefit of the spring rains.

### POTATOES AND BLACKBERRIES.

A marked article in the Cisco Round-Up says Capt. Willard Robison of Eastland county has four acres in blackberries which net their owner $100 to the acre as a berry crop, while between the rows are raised a heavy crop of the finest Irish potatoes. The potatoes and the berries together give Mr. Robison a clear profit of $500 an acre. If this was something outside of Texas we'd take it "with a pinch of snuff," as they say, but no one has a right to be surprised at anything one hears with reference to Texas' productiveness. But this idea of growing Irish potatoes between one's blackberry rows is something new to us—we would have supposed the blackberries were covering the ground too completely for Irish potatoes to have much of a showing between the rows.

### THE WILD GOOSE PLUM.

Last week we mentioned having seen a considerable representation of the Marianna plum on the Fort Worth market. This week the wild goose plum has put in a prominent appearance. The plums are of excellent quality and the market is well supplied with them, though on account of their attractiveness and excellence they are not running off as "cheap as dirt," the wholesale selling price being two dollars a bushel. After a careful examination of hundreds of specimens we have not seen a curculio in a single plum. The growers report the crop as fair, so, you see, we have another plum that is a success in Northern Texas, and it does seem to us that with his wild goose plums at two dollars a bushel, and with other products in about the same proportion, an industrious horticulturist ought to be able to make a living here, at least.

### ARSENICAL POISONS.

Already we have published through these columns a good deal with reference to arsenical poisons employed as insecticides, but still people write us for further information on the subject. We now have on file nine letters asking us to give particulars, etc., through "Our Correspondence" column this week. As the subscribers are constantly pouring in we take it for granted that these writers are new readers of THE GAZETTE, and hence have not seen our former articles. For the information of all such we make up the following from a bulletin of the Iowa agricultural experiment station, issued on the authority of that eminent entomologist, Professor C. P. Gillette:

1. The oldest leaves of a tree or plant are most susceptible to injury from arsenical applications. They often turn yellow and drop without showing the usual burnt or spotted appearance. One would naturally suppose that the youngest and most tender leaves would be the leaves most easily damaged, but experience has shown that this is not the case.

2. Heavy dews increase the injury done to plants by arsenical poisons. This probably comes of the fact that dews tend to dissolve the poisons and carry them to the pores of the leaves, whereas, in a dry state the poisons would remain inactive on the surface.

3. Leaves remaining perfectly dry after the poison has been applied can scarcely be injured even though the poisons have been spread upon them in large quantities. On this account it is probably best to apply poisons in the first part of the day so that there will be a speedy drying of the plants after the application.

4. Applications made in the heat of the day and in the bright sunlight do not injure foliage more than when applied in the cool of the day.

5. A shower of rain following the application of arsenical poisons to plants washes a portion of the poisons from the foliage, but does not increase the injury, as in the case of a heavy dew. This refers alike to poisons applied in either the dry or liquid form.

6. Leaves suffering from a fungous disease are more susceptible to injury than are healthy leaves.

7. Repeated and thorough tests have shown that London purple is, of all poisons, the most injurious to foliage, and white arsenic, prepared on Professor Stelle's plan, the least injurious. Paris green may be regarded as ranking between the two poisons named.

8. It has been ascertained by the Iowa experiment station that white arsenic in solution, on Professor Stelle's plan, may be improved as to its foliage-injuring qualities by adding a little lime. This converts it into something like the Bordeaux mixture.

9. White arsenic solution, as recommended by Professor Stelle for the cotton worm, may be kept as a saturated solution through an indefinite period of time, but as a diluted solution made ready for application to the plants it should be applied at once, as holding it over in this condition renders it more injurious to foliage.

10. Lime added to London purple or Paris green in water greatly lessens the injury that these poisons would otherwise do to foliage.

11. The arsenites cannot by any ordinary method be successfully mixed in a kerosene emulsion.

12. The arsenites in strong soapy mixtures do considerable more harm to foliage than when applied in water only.

### ARSENIC FOR COTTON WORMS

Let us again assure the readers that there is no more danger attending the employment of white arsenic as an insecticide for destroying the cotton worm than there is in employing London purple or Paris green. If you should go to San Marcos, Hayes county, Tex., where we were stationed some months by the United States government, as an entomologist, in 1880, they would tell you a funny story about a planter with arsenic in his boots. He was a man of solid sense, and when he had made a careful study of the newly-proposed arsenic remedy he concluded to apply it at once, as the worms were fairly getting away with his cotton. So he made his solution of arsenic on the plan given by us in these columns some weeks ago, and got all ready for a move on the enemy. But an unforeseen obstacle suddenly loomed up. His plantation hands were all negroes, and as they knew the remedy to be applied was arsenic, not a mother's son of them would have anything to do with it. After treating them to a round of words more emphatic than elegant, he hauled off his boots, placed half a pint of the poisonous solution into each, and then drew them on again. This to some extent restored confidence among the employes and the work of poisoning the worms went on. The planter wore his boots with the poison in them throughout the entire day, and no injurious effects whatever resulted.

### SEEDLINGS MUST SAVE US.

From time to time we have assured the people of Texas that fruits to become an entire success in our state must be Texan in character, and that fruits of this character must come to us through seedlings. We must plant seeds and select the best results until we have found exactly what we want. It may take a good while for us to entirely fill the bill, and it may not—the very first effort might do it. Professor Thomas Newhan, the very leader among American horticulturists, contributes to the Gardeners' Chronicle a history of the Kieffer pear, which clearly illustrates what may be done by propagating seedlings. There was (and still is) in this country an almost worthless variety of the pear known as the Chinese sand pear. It is very hardy and a most prolific bearer, but its fruit is the poorest excuse for a pear that could be imagined. Peter Kieffer, living in the neighborhood of Philadelphia, had one of the trees on his place. From this, for his own amusement, he raised numerous seedlings. Finally one of the seedlings showed a considerable variation from the general appearance of the sands, and Mr. Kieffer gave it special attention. When it fruited Mr. Kieffer found himself in possession of the now celebrated Kieffer pear. We now copy from Professor Meehan.

Mr. Kieffer grafted and sold a few here and there for $5 each; but though he distributed among his few horticultural friends annually fruit that would make the most cold-souled epicure leap with joy, no effort was made by any one to place it properly on the market. At length the great centennial exposition came. Mr. Kieffer had some on exhibition; these excelled in size, beauty, flavor—everything, indeed, for which any pear could possibly be esteemed.

The writer, who was secretary to the jury, can truly say that he remembers eating no pear like them. They had a medal and a strong report in their favor, and Mr. William Parry, a well known introducer of new fruits, made an arrangement with Mr. Kieffer for grafts. In this way the variety got regularly into commerce. It may be said that gardening is no longer an art here, as it was in Mr. Kieffer's day. A fruit has to be "hardy," and "first-class," just as nature gives it to you. You plant the tree, but to a very great extent it must forever after be able to take care of itself. Philadelphia is being fast covered with buildings over its vast area of 120 square miles. The original Kieffer pear tree is still standing in Mr. Kieffer's grounds, but it will probably not be many years before the march of improvement will bid it begone. But the Kieffer pear will not go with that original tree—the world has it to stay as its own, and it will stay through all time to come.

This shows how nature may adapt a growth to local conditions. Mr. Kieffer was one of the commonest and humblest of men. He planted seeds of the old sand pear "merely to be doing," as we say, without any expectations of such results as followed. But for this mere accident, as it were, his name would never have been heard beyond the circle of his immediate neighbors, but now it is a household word throughout the length and breadth of the land, and thousands upon thousands have been blessed by his little and aimless experiment.

The well-known LeConte pear is another chance seedling of the old Chinese sand pear, though its exact origin cannot be so correctly arrived at as can that of the Kieffer.

Many have represented that these two celebrated pears are crosses on some popular variety, as the Bartlett, for instance, but this is not at all probable, as the sand pear does not flower exactly with any of the regular named varieties. It is more reasonable to regard the new pears as simply the result of an effort of nature to adapt her growths to local conditions.

### WHY NOT IRRIGATE?

Mr. W. S. Burke of Albuquerque, N. M., writing to the Massachusetts Ploughman, says the time was, and within the recollection of most of us, when "Uncle Sam was rich enough to give us all a farm"—not a poor, starvling apology for a farm, but a farm of 160 acres of as good land as ever laid out of doors—land which only needed to be planted to yield good crops; but as the years rolled by Uncle Sam's farms were appropriated by his relatives, until the time has now come when the man who desires to get a farm on easy terms must go out into those vast regions in which the soil is as good as a soil could possibly be, and where the sun shines almost perpetually through the growing season, but where the rainfall through that growing season is scarcely up to every requirement for such agricultural results as under other circumstances the soil would be capable of giving. But even here nature has provided for him in various ways to enable him to give those lands an artificial water supply and thus carry them, in point of profitable productiveness, entirely beyond the capabilities of those lands celebrated in song, as mentioned above.

When we come to realize the vast importance of this section of our common country, continues Mr. Burke, which can be made to yield enormously under irrigation, but which, without water applied by artificial means, must necessarily remain uncertain for the agriculturist, we shall begin to speak of it as it is, and to shape our arrangements for getting out all there is in it. This cannot do otherwise than inaugurate a period of prosperity the like of which has not yet been seen on the American continent.

To this the editor of the Ploughman adds that there are some writers for the agricultural journals of the day, and even some editors of agricultural journals, who take a decidedly narrow view of the question of irrigation.

"Agriculture," they say, "is depressed, the value of farming land is low, and it is not improving in value; the condition of the average farmer does not compare favorably with that of the average laborer of equal ability in other trades and vocations, and what is the reason? Because we have too much cheap and productive land at the West and Southwest with which we must compete, and a better development of those regions would serve to make matters worse and still further depress the market for agricultural products and lands." This, in the opinion of the Ploughman, is an exceedingly narrow view of a great question.

No one doubts or disputes the fact that the valuable arable land of our domain is already occupied. In California, Washington and Oregon most of the land which can be irrigated easily has been taken up and improved. There remains a vast area at the Southwest not yet improved by irrigation that ought to be improved at as early a day as possible. The area needs the improvement to better sustain its present population and to fill it up with a heavier population, and the whole country needs what it would be able to produce under a well-arranged artificial water supply. The nation needs more room. Either one of these things must shortly come to pass—we must make room for the thousands of immigrants constantly flocking to our shores from Europe by improving these lands, or we must check the immigration, or we must suffer a reduction in the rates of wages and productiveness of labor. Then why not irrigate every foot of land that can be irrigated, and be made more productive thereby? A heavy population without a correspondingly heavy production will bring us to witness a depression and suffering among the laboring class which at present we fortunately know little about.

### IRRIGATION IN NEW ENGLAND.

The editor of the Massachusetts Ploughman says a Mr. A. P. Topley of that section of country has been irrigating his market garden, and particularly his early cabbages, and finds it to pay handsomely. The water employed is pumped up (don't say what from) by steam power. The writer adds that "there can be no question of the fact that there are many garden crops and fruits that will pay for irrigation, in seasons when we have not rain enough; and the fact that we had enough rain last year and the year before, through most of the growing season, should not make us blind to the fact that in most seasons we have periods of drouth in which irrigation would be very profitable. The experience of gardeners who have tried watering crops in dry seasons, proves beyond a doubt that the profit made by watering them will sometimes pay for the whole outlay for watering machinery in a single season."

The article goes on to show that irrigation is rapidly on the gain in the New England states, and that it is paying big returns in every case where correctly applied. The conditions up there are not overly favorable as a rule, for the streams run in narrow and deep valleys, and hence their waters cannot well be fitted to the cultivatable lands. But Yankee ingenuity is at work, and already considerable tracts of land are being irrigated by "drove wells." The wells run at a depth ranging from fifty to 200 feet, and supply a stream of five or ten, often twenty, gallons per minute continuously from a two-inch pipe. The cost of driving such a well will vary with circumstances from $50 to $300, and the cost of pumping apparatus will vary from $300 to $1000 or more, according to the amount of work to be done, and the other circumstances of the case. And even this character of irrigation is believed to pay at least 100 per cent profit on the investment necessary to secure it.

We are at a loss to know how the people of Texas, who say that irrigation is not at all necessary, will take this most reliable statement, in face of the fact that the annual rainfall in most parts of our state is far below that of New England. Along the Fort Worth-Waco artesian area there are millions of gallons of water running to waste daily from artesian wells, but nobody appears to thing of making any use of it for watering crops. Up in New England, however, they are driving down their gas pipes, and pumping up water by steam power, and becoming perfectly jubilant over the results. But never mind, boys—you'll find a use for this wasting of water before many years have rolled around. This is a new country, you know, and as a rule people come to a new country to merely live, rather than with a view to getting rich. If they have any dreams of sudden riches those dreams point to some kind of land speculation. The great day of such speculations is getting along well toward the afternoon, and "to-morrow morning" a new programme will be on the black-board, showing how the people may become rich off Texas resources rather than off speculation in Texas real estate. There will be nothing to risk in the work of that to-morrow. Success, under correct management, will be a thing as sure as the rising of the sun.

## OUR CORRESPONDENTS.

This department is devoted to answering such questions as may be asked by our subscribers, which may be of general information. Inquiries of personal character that require answer by mail should always have stamp inclosed. Please give full name and postoffice address in addition to any such signature as "Subscriber," or "A. G. D." not for publication, if against the will of the writer, but to admit of direct communication should such a thing be deemed necessary. Address as directed at head of this page.

### ON WESTERN TEXAS.

What do you think of the western belt of Texas for stock-raising and general farming, beginning, say, at San Angelo and ranging northward? Is the country too dry for good success in the lines named? Much cheap land might still be had over there, but of course one don't want land upon which nothing could be raised.

Temple, Tex. W. A. CLARK.

Northward from San Angelo, Tom Green county, would carry us over the very best portion of the Panhandle, and hence what is supposed to be the finest stock-raising country in the world. It is, furthermore, a fine wheat and other small grain country, but for general farming, for crops to run the season through, the rainfall is understood to be a little too light for best results. Irrigation is now claiming much attention in the Panhandle, and once the thing gets fairly on foot, those regions of Northwestern Texas will have it all their own way. Irrigation will make them the finest fruit and general farming regions on the face of the globe. We could not think for a moment that a man was risking anything in buying the still comparatively cheap lands of Northwestern Texas.

### THE RUSSIAN MULBERRY.

Please inform me through THE GAZETTE as to the value of the Russian mulberry as a hedge plant for fencing purposes. "G."

Fort Worth, Tex.

We don't think much of the Russian mulberry, so called, as a hedge plant. In our opinion, after giving it a somewhat careful study, a cottonwood hedge would beat it by a large per cent, and we have no idea that you are hankering after a cottonwood hedge. If you should want our opinion of the Russian mulberry, further, it is at your command. If you are a party interested in the sale of the Russian mulberry our opinion could be of no advantage to you. The Russian mulberry is something new, and therefore something to speculate upon. Some of the old people now living can well recollect when the "Multicaulis," still here to a limited extent, was that same kind of thing. It was to feed up the silkworms to such a degree of fatness that everybody would be forced into arraying himself in the finest silks and satins, on account of their being cheaper than common cotton goods. Well, you old folks know how it turned out, and it is just about the same way with the now boosted Russian mulberry. A great deal is said, and sometimes prettily said, about "the last man" on this old earth of ours. Nothing has ever been said about "the last tree." Of course if there is to come a last man there must also come a last tree. Now, if we were the last man, and the Russian mulberry was the last tree, we'd plant and propagate the Russian mulberry, but we would be fearfully sorry that the Multicaulis, or the cottonwood, or some other more worthless tree, hadn't outlived it.

No doubt there are a few good and honest men endeavoring to sell the Russian mulberry on its supposed merits, but at the same time there are hosts of sharpers trying to put it off as an imposition upon the people. Within the past five years we have had very large numbers of letters from "disinterested" writers whom nobody knew, setting forth all the rare virtues of the Russian mulberry. We could easily see "the cat in the meal tub," and so those letters went the way of all the earth, leaving us as their last readers. On two occasions a moneyed price was offered us to boom the Russian mulberry in our own name, but just then blackberries were coming in, and it would soon be roasting-ear time, so we were able to see our way through for a little season, as related to "table comforts," and on that account, presumably, the Russian mulberry didn't get boomed through the paper with which we are connected.

Now don't understand from this that we are attempting to represent the Russian mulberry as a humbug. We don't look upon it as anything of that sort. In our judgment it is everything it would appear to be to any sensible man, who would take the pains to study it a little. But the Russian mulberry is not attempting to sell itself to a credulous people, and hence when we say the Russian mulberry, as such, is no humbug, we want it distinctly understood that we are confining our remarks to the Russian mulberry, itself, and not to any one who might be concerned in the said Russian mulberry.

The Russian mulberry might make something of a hedge—the people who have it for sale say it is sublime as a hedge plant. If, however, you must have a hedge, and can't get bois d'arc, or hackberry, or willow, or cottonwood to make it out of, we'd suggest still another hedge plant before advising you to settle down on Russian mulberry. Make your hedge of poke stalks. We cannot assert that the poke hedge would be any better as a turner of stock than would the Russian mulberry hedge, though it would probable be equally as good, while at the same time it would present a decided advantage in its capabilities of supplying one with his spring greens. Did you never eat bacon and poke greens? They are not to be sneezed at, especially in a section of country where the commonest kind of turnip greens are selling at 10 cents a quart, dropped loosely into the measure. You'd get no spring greens out of your Russian mulberry hedge, neither would you get any more of a fence than you would get out of your poke greens patch. Then why not stick to the greens?

### ABOUT BARREL GARDENING.

I have just been told by a gentleman who professes to know all about such things, that cucumbers, muskmelons and various other crops may be raised in flour barrels with the greatest of success, and kept growing throughout the season. The barrel is simply filled with good garden soil, and the seeds planted in the soil. The great gain is found in watering the plants. There is no waste of water, as in other forms of irrigation. You simply pour the water into the barrel, and the plants get all of it. What do you think of the system? V. V. V.

Fort Worth, Tex.

This barrel-gardening nonsense is not new by any means—it is simply an old thing rejuvenated. We say rejuvenated on account of the fact that we have seen a good deal about it in the papers of late. It was in its greatest glory about 1875. A gentleman of Bay St. Louis, Miss., who wrote under the nom de plume of "Nota Bene," started it in the following two paragraphs, which quite generally went the rounds of the press:

"We use old flour barrels in various ways. I fill up a barrel with good rich earth, and a top dressing of manure, and plant it with cucumber seed. The vine grows luxuriantly, is trailed on a fence or harbor and will bear till frost, yielding several hundred cucumbers.

Our housekeeper makes a very tidy dressing table or washstand out of an empty flour barrel, dressing it up in dimity or muslin, and bordering with fringe or ribbon.

We make a comfortable cushion chair by sawing the barrel in the middle, leaving three of the staves to support the back. Then fill up with clean straw, cotton or wool; cover the whole with calico, and you have a chair quite as pleasant as one made of rosewood or mahogany.

For our own part, we never took much stock in that barrel business. People wrote to us for information concerning it and we replied to them through the paper with which we were then connected that theory was one thing and practice another. We went on to state that the agriculturalist has hosts of theories to deal with. They are a kind of poetry for him, and if he has a taste for poetry he may enjoy them first-rate, provided he don't undertake to put too many of them to practice. There is danger in that. A few attempts at application may spoil the entire mess, by giving one a chronic distaste for mere theory, consequently wiping out forever, in his case, a rather important source of enjoyment. So our advice to you shall ever stand as follows: When some theoretic agriculturist tells you a beautiful story about, say, what a nice piece of furniture you might make of an old flour barrel, or what wonders you might perform in the garden with the said barrel, or what a marvel of beauty you might bring to light by suspending a peach seed above a tumbler of water, or what a gorgeous window decoration you might cause to spring from a sweet potato in a bottle, try to believe every word of it, and to enjoy in your imagination the delightful things you might make, but don't undertake to make them. They are pleasant to think about, and in all such cases it is "best to let well enough alone." So say we still.

Nota Bene's paragraphs, as already quoted, were first published in the then existing "Home Journal" of New Orleans. No doubt the gentleman who told you about the great advantages of flour barrel gardening had obtained his cue directly from the publication mentioned above, for about all the papers of the country copied it.

A year or so after the publication had been made a gentleman called at our office in Mobile and informed us that he was down from the North in search of some suitable point at which to start a market garden. He was a market gardener by profession, he said, and had many new systems of culture by which he was able to astonish the world; especially was he able to work the most extraordinary wonders in the production of the cucumber. He could realize a handsome little fortune off an acre of land to cucumbers in a single season! But he didn't want to make it all himself; he wanted to share his extraordinary profits with some good fellow as a partner. We hadn't much faith in cucumbers as a wholesome diet, therefore our conscience wouldn't allow us to enter into an arrangement with the gentleman, and he left us to battle on through the hard times alone; not, however, until we had given it as our opinion that the village of Citronelle, some thirty miles above Mobile, on the Mobile and Ohio railroad, would be a good point for a really progressive market garden.

Our champion cucumber raiser went to Citronelle, and there found a partner with tin enough to run the business, and without any conscientious scruples bearing on gorging the general public with cucumbers. It was to be a great cucumber success, and so the whole thing, aside from furnishing money, was to be left to the gentleman from the North with the great cucumber secret. So that gentleman took scrip in his purse and proceeded to collect all the old flour barrels in all the country round about. We think, as well as we can remember, that he got about ten acres of flour barrels, which he filled with good rich earth, according to directions by Nota Bene, for it was evident from the start that Nota Bene had been at the entire bottom of that broad transaction. The barrels were then planted with cucumber seeds and ten acres of arbors were put up for the cucumber vines to run upon and make up their enormous fruitage.

Well, from some cause or other it must not have been a good season for cucumbers. It may be that the moon never got right for those vines to run, and so one fine morning, to quiet the rising mistrust of the gentleman who had furnished the "dough," the champion cucumberist concluded he had better run for them, which he did—to where the woodbine twineth. And the gentleman who had furnished the "dough" took what little he had left after selling his place and paying off the mortgage, and invested it in a small fishing smack, with a view, as many supposed, to turning pirate. The smack went to sea and never returned, hence we are left in doubt as to what grew out of that cucumber enterprise. Some of those great uprisings and outbreaks on the Southern hemisphere may have sprung from it—who knows? When a man has waxed into bitterness over sinking his all on a cucumber experiment there is no safe rule for settling how far his desperation might carry him.

It has just occurred to us that in quoting Nota Bene's article giving rise to flour barrel gardening, we have gone a little beyond what our correspondent was requiring of us. The printers have already "stuck it into type," and that's what they live by. The type must stand, and to afford a good reason for its standing we must tell another, but true story, entirely out of the line of barrel gardening.

The reader has already taken in how Nota Bene's housekeepers made nice things for the house out of old flour barrels. Our folks had been reading that pleasant story, and so one evening when we took the minister home with us for tea, we, on entering the parlor, were much astonished by the appearance of something we had never seen there before. It was a flour barrel chair that our folks had made after Nota Bene's directions. At sight of it we felt a hot flush run up our spine, for it did not exactly fill our idea of the ornamental; and there was no improvement in the state of our feelings when pretty soon we saw the preacher rest his gaze upon the singular piece of furniture with an unmistakable expression of displeasure.

From that moment on the minister seemed ill at ease, and finally, after glancing out of the window, he said to us in a half whisper, and with an inclination of the head in the direction of the barrel chair: "Brother Stelle, I see some ladies coming, and it has just occurred to me that you might feel embarrassed when you noticed that your servant had left a chair in the parlor which evidently belongs to the sick room."

Good reader, that chair went out, and these eyes of ours never beheld it afterwards.

## POPULAR SCIENCE.

### AN INSECT THAT ACTUALLY BORES METALS.

**Removing Tannin From Tea—Important Experiments With Steel Wire—A New Flying Machine.**

Much interest is being roused in Germany over the discovery of an insect that actually bores through metal pipes. For a considerable length of time very mysterious leaks have been found in lead pipes and in a few copper pipes. The openings looked like holes through which a nail had been driven. At last, according to Gesundheit's ingenieuler, the author of the trouble has been found. An insect of the wasp character was found boring the hole. The hole on the exterior of the pipe was of a rounded form, about one-quarter of an inch long by one-eighth inch wide, and the penetration was through the entire thickness of the metal. Though of rare occurrence, well authenticated instances of similar injuries by insects are on record.

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The ordinary Chinese tea is always rich in tannin. Mr. H. Grimshaw says this tannin is readily absorbed by suitable animal substances, such as horn shavings, dried albumen, add clippings, and the like. It is preferable to hide the material to the tea in the dry condition before the infusion is made. But it may also be added to the infusion, or the infusion may be passed or filtered through a layer of the substance. The quantity of animal substance to be added to the tannin-containing material must be determined by the amount of tannin contained in it. In the case of tea the proportion may vary from one to two parts of animal substance to ten parts of tea. This discovery is looked upon as of importance, owing to the fact that tannin in tea renders the tea unwholesome for some persons.

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In the current number of the Philosophical Journal Mr. F. J. Smith gives an account of some new methods of investigating the points of recalescence in steel and iron. The object of the experiments was to discover the time connection which exists between the change of form and the change of temperature. Several methods of experimentation were tried, and the following was the one finally adopted: The upper end of the steel wire to be tested was fixed vertically; the lower end was attached to a long light lever of aluminum, so arranged that a small change of length of the wire caused a large movement of the end of the lever, which traced a line on the smoked surface of paper rotating on an ordinary physiological chronograph cylinder. A platinum-platino-rhodium thermo-couple, twisted around the wire where it was heated, was in circuit with a Deprez-D'Arsonval galvanometer. By means of this combination the temperatures at which the changes of length of the wire took place were read. The movements of the beam of light reflected from the galvanometer were recorded on a moving photographic film. The outcome of the experiments was that the changes of form of the metal under examination took place at the times of change of temperature, so that a curve so traced on the smoked paper can be used as an index of the changes of form and the changes of temperature.

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Thinking it probable that these changes might be accompanied by some sounds at the critical points, the following apparatus was constructed: A mica disk was fitted into a circular recess turned out of a piece of wood. The steel wire under examination was attached at one end to the center of the disk, at the other to a vertical post. The front of the recess into which the mica disk was fitted was furnished with two sounding tubes. On heating the wire a certain temperature was reached at which a sharp crackling sound was heard. As the temperature was increased this ceased; then, on removing the flame, at the same temperature at which the first sound was heard, a second similar sound occurred. This took place at the point of recalescence. As the wire cooled this ceased, and then, when a temperature of 420 degrees C. was reached, a very sharp sound was emitted. This third sound appears to take place at the second critical point observed by M. Osborn. The wire used in these experiments was steel pianoforte wire, annealed and straightened. The last experiment was also arranged so that the steel wire when heated should be in a strong magnetic field. Repeated trials showed that the sounds produced were in no way altered by the fact of the wire being in the magnetic field.

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A new flying machine is now before the public, according to the Scientific American. It is the invention of Mr. H. Maxim, and works on the principle of a kite. The experimental device consists of a thin sheet or kite four feet wide and thirteen feet long, which is propelled by a screw capable of 2500 revolutions per minute. According to information given by Mr. Maxim this machine, when properly inclined and pushed forward by the screw at the rate of thirty miles an hour, will maintain itself in the air; if the forward speed is increased to thirty-five miles an hour, it begins to ascend; at ninety miles its rising power is quite strong.



### Panhandle of Texas.

For information in regard to the best wheat and small stock farming county of Northwest Texas, write to F. L. Blanchard, Plainview, Hale county, Tex.

## SIX AT A SHOCK.

### MAN-KILLERS TO BE ELECTROCUTED IN NEW YORK.

**They Killed Wives, Friends and Mistresses. The Execution to Take Place at Sing Sing.**

Special to the Gazette.

NEW YORK, June 25.—Unless justice miscarries again, the week beginning July 6 will prove to be a memorable one in the history of electrocution, for six murderers are to be put to death by means of the electric chair. At Sing Sing prison the chamber of execution where the fatal chair is situated is a wooden structure fifty feet by seventy-eight and it has no furniture except the chair. Back of this is a partition and here the executioner will hide and await the signal to turn the lever and send the electric current into the body of the six condemned men one after another. The men are Jagiers, the Japanese smiler, Wood, the negro, Slocum, McIlvaine and Trezza.

Jagier on November 10, 1889, stabbed a shipmate while at a boarding house.

James Slocum murdered his wife in their apartments on New Year's night, 1890.

Wood, on June 17, 1889, engaged in a quarrel with Charles Dufin, also colored, and Wood shot and killed his companion.

Charles McIlvaine murdered Grocer Luca in Brooklyn two years ago under the most brutal circumstances.

The Smiler is an ex-officer of the Salvation Army, and is a bigamist as well as a murderer. The woman he killed in cold blood was his third wife.

Trezza murdered his mistress in a Mulberry street den two hours and a half ago.